AMENDMENTS TO CLAIMS

1 – 50 (CANCELLED)

51. (NEW) A node for use in a communications system, that transfers service data units over a communications link as a protocol data unit having a payload area and a header area, comprising:

a communications processor configured to convert service data units into protocol data units by,

mapping a first service data unit to the payload area of a protocol data unit,

determining whether a second service data unit is larger than the remaining payload area of the protocol data unit,

if the second service data unit is not larger than the remaining payload area of the protocol data unit, then mapping the second service data unit to the remaining payload area of the protocol data unit,

if the second service data unit is larger than the remaining payload area of the protocol data unit, then fragmenting the second service data unit into at least two fragments and mapping the first fragment to the payload area of the protocol data unit; and

wherein the header area of the protocol data unit comprises a length field, and

wherein some of the payload area of the protocol data unit comprises a packing subheader for each service data unit mapped therein having a length field.

52. (NEW) The node of claim 51, further comprising:

a transmitter coupled to the communications processor configured to transmit the protocol data units from the node.

53. (NEW) The node of claim 51, wherein the service data units have more than one format.

54. (NEW) The node of claim 51, wherein the packing subheader further comprises a fragmentation control field.

55. (NEW) The node of claim 54, wherein the fragmentation control field comprises at least two bits.

56. (NEW) The node of claim 51, wherein the packing subheader further comprises a fragment sequence number.

57. (NEW) The node of claim 51, wherein the header area of the protocol data unit comprises a packing subheader present field.

58. (NEW) The node of claim 57, wherein the packing subheader present field comprises at least one bit.

59. (NEW) The node of claim 51, wherein the header area of the protocol data unit comprises an encryption control field.

60. (NEW) The node of claim 59, wherein the encryption control field comprises at least one bit.

61. (NEW) The node of claim 51, wherein the header area of the protocol data unit further comprises an encryption key field.

62. (NEW) The node of claim 61, wherein the encryption key field comprises at least two bits.

63. (NEW) A base station for use in a communications system, that transfers service data units over a communications link as a protocol data unit having a payload area and a header area, comprising:

a communications processor configured to convert service data units into protocol data units by,

mapping a first service data unit to the payload area of a protocol data unit,

determining whether a second service data unit is larger than the remaining payload area of the protocol data unit,

if the second service data unit is not larger than the remaining payload area of the protocol data unit, then mapping the second service data unit to the remaining payload area of the protocol data unit,

if the second service data unit is larger than the remaining payload area of the protocol data unit, then fragmenting the second service data unit into at least two fragments and mapping the first fragment to the payload area of the protocol data unit; and

wherein the header area of the protocol data unit comprises a length field, and

wherein some of the payload area of the protocol data unit comprises a packing subheader for each service data unit mapped therein having a length field.

64. (NEW) The base station of claim 63, further comprising:

a transmitter coupled to the communications processor configured to transmit the protocol data units from the base station.

65. (NEW) The node of claim 63, wherein the service data units have more than one format.

66. (NEW) The base station of claim 63, wherein the packing subheader further comprises a fragmentation control field.

67. (NEW) The base station of claim 66, wherein the fragmentation control field comprises at least two bits.

68. (NEW) The base station of claim 63, wherein the packing subheader further comprises a fragment sequence number.

69. (NEW) The base station of claim 63, wherein the header area of the protocol data unit comprises a packing subheader present field.

70. (NEW) The base station of claim 69, wherein the packing subheader present field comprises at least one bit.

71. (NEW) The base station of claim 63, wherein the header area of the protocol data unit further comprises an encryption control field.

72. (NEW) The base station of claim 71, wherein the encryption control field comprises at least two bits.

73. (NEW) The base station of claim 63, wherein the header area of the protocol data unit further comprises an encryption key field.

74. (NEW) The base station of claim 73, wherein the encryption key field comprises at least two bits.

75. (NEW) The base station of claim 73, wherein the header area of the protocol data unit further comprises a connection identifier field.

76. (NEW) A communications system for transferring service data units in a first format or a second format over a communications link as protocol data units having a header area and a payload area, comprising:

means for providing service data units from at least one data source;

means for encapsulating the service data units into protocol data units having,

means for mapping a first service data unit to the payload area of a protocol data unit,

means for determining whether a second service data unit is larger than the remaining payload area of the protocol data unit,

means for mapping the second service data unit to the remaining payload area of the protocol data unit, if the second service data unit is not larger than the remaining payload area of the protocol data unit,

means for fragmenting the second service data unit into at least two fragments, if the second service data unit is larger than the remaining payload area of the protocol data unit,

means for mapping the first fragment of the second service data unit to the remaining payload area of the protocol data unit, and

means for wirelessly transmitting the protocol data unit over the communications link; and

wherein the header area of the protocol data unit comprises a length field, and

wherein some of the payload area of the protocol data unit comprises a packing subheader for each service data unit mapped therein having a length field.

77. (NEW) A method of transferring service data units over a communications link as protocol data units having a header area and a payload area, comprising:

(a) preparing a current protocol data unit having a length field in the header area;

(b) entering the length of the protocol data unit in the length field;

(c) identifying a current service data unit for processing;

(d) determining whether the current service data unit is larger than the available payload area of the current protocol data unit;

(e) if the current service data unit is larger than the available payload are of the current protocol data unit, then

fragmenting the current service data unit into first and second fragments,

creating a subheader indicating of the length of the first fragment,

packing the first fragment and subheader into the available payload area of the current protocol data unit,

storing the second fragment of the current service data unit,

adjusting one or more fragmentation control bits in the header area of the current protocol data unit to indicate the presence of a fragment, and

returning to step (a) to begin preparing the next protocol data unit; and

(f) if the current service data unit is not larger than the available payload area of the current protocol data unit, then

creating a subheader indicating the length of the current service data unit,

packing the current service data unit and subheader into the available payload area of the current protocol data unit,

determining whether there is still available payload area of the current protocol data unit,

if there is available payload area, returning to step (c),

if there is no available payload area, returning to step (a) to begin preparing the next protocol data unit.

78. (NEW) The method of claim 75 further comprising transmitting the current protocol data unit after determining there is no available payload area.

79. (NEW) The method of claim 75 further comprising encrypting the payload of the current protocol data unit after determining there is no available payload area.

80. (NEW) The method of claim 75 further comprising creating a fragmentation sequence number in the subheader of the first fragment.

81. (NEW) The method of claim 75 further comprising creating a fragmentation control number in the subheader of the first fragment.